

ICS 43.040.10



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 20716.1-2025

**Road vehicles - Connectors for the electrical connection of towing and
towed vehicles(7-pole) - Part 1: Connectors for braking systems and
running gears of vehicles with 24 V nominal supply voltage**

(English Translation)

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1 Scope

This Document specifies the dimensional characteristics, contact distribution, testing and requirements for a 7-pole electrical connector for the braking systems and running gears between a towing and towed vehicles with a nominal voltage of 24 V. It also specifies a storage socket for storing the plug when the plug and socket are separated.

This Document applies to Category N towing vehicles with a nominal voltage of 24 V and is for reference only for other vehicles.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

ISO 4091 Road vehicles - Connectors for the electrical connection of towing and towed vehicles - Definitions, tests and requirements

NOTE: GB/T 5053.3-2006 Road vehicles - Connectors for the electrical connection of towing and towed vehicles - Definitions tests and requirements (ISO 4091.2003, IDT)

ISO 4141 (all parts) Road vehicles - Multi-core connecting cables

NOTE: GB/T 5054 (all parts) Road vehicles - Multi-core connecting cables [ISO 4141 (all parts)]

ISO 7638-2 Road vehicles - connectors for the electrical connection of towing and towed vehicles - Part 2.Connectors for braking systems and running gear of vehicles with 12V nominal supply voltage

NOTE: GB/T 20716.2-2006 Road vehicles - Connectors for the electrical connection of towing and towed vehicles - Part 2.Connectors for braking systems and running gears of vehicles with 12V nominal supply voltage (ISO 7638-2.2003, IDT)

ISO 11992-1 Road vehicles - Interchange of digital information on electrical connections between towing and towed vehicles - Part 1.Physical and data-link layers

NOTE: GB/T 43192.1-2023 Road vehicles - Interchange of digital information on electrical connections between towing and towed vehicles - Part 1.Physical and data-link layers (ISO 11992-1.2019, IDT)

ISO 11992-2 Road vehicles - Interchange of digital information on electrical connections between towing and towed vehicles - Part 2.Application layer for brakes and running gear

ISO 12098 Road vehicles - Connectors for the electrical connection of towing and towed vehicles - 15-pole connector for vehicles with 24V nominal supply voltage

NOTE: GB/T 20717-2024 Road vehicles - Connectors for the electrical connection of towing and towed vehicles (15-pole) - 15-pole connector for vehicles with 24 V nominal supply voltage (ISO 12098.2020, IDT)

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in ISO 4091 apply.

The websites for terminology databases used for standardization maintained by ISO and

IEC are as follows.

4.1 General

Details not specified in this Document are left to the discretion of the manufacturer.

The contacts shall be movable so as to adjust to the reference position when the plug and socket are mated.

4.2 Plug

The dimensions of the plug shall be as shown in Figure 1.

The design of the latch shall ensure the space required for the screw to secure the socket (see Figure 2).

4.3 Socket

The dimensions of the socket shall be as shown in Figure 2.

The socket cover shown in the figure is in the open position; it shall automatically close when the plug is removed.

4.4 Storage socket

The dimensions of the storage socket shall be as shown in Figure 3.

The socket cover shown in the figure is in the open position; it shall automatically close when the plug is removed.

5.1 General requirements

Spiral cable assemblies are used on semi-trailer towing vehicles (saddle tractors). Regardless of whether the tractor is connected to a semi-trailer, the cable assembly can be connected to the tractor's circuit through the socket or directly (see Figure 4).

Non-spiral cable assemblies are used on drawbar trailers; the socket shall be installed on the rear of the full trailer truck (see Figure 4).

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